

What is claimed is:

1. A device for the delivery of a substance to the eye comprising:
5 a housing for holding the substance;
at least one outlet port through which the substance is delivered from the device to the eye; and
a non-aerosol, non-electric delivery mechanism, whereby the substance is delivered to the eye in the form of a spray or mist.
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2. A device for the delivery of an artificial tears or demulcent composition to the eye comprising:
a housing for holding the substance;
at least one outlet port through which the substance is delivered from the
15 device to the eye; and
a non-aerosol, non-electric delivery mechanism, whereby the substance is delivered to the eye in the form of a spray or mist.
3. The device of claim 1 or 2, wherein the force of the spray or mist is sufficient to
20 deliver the spray or mist to the eye without the aid of gravity.
4. The device of claim 1 or 2, wherein the spray is delivered to the eye in a substantially horizontal direction.
- 25 5. The device of claim 1 or 2, wherein the housing is hollow and the substance is contained within the hollow of the housing.
6. The device of claim 5, wherein the device further comprises a tubular member extending inside the hollow of the housing, thereby providing fluid communication
30 between the outlet port and the substance within the housing.
7. The device of claim 1 or 2, wherein the housing contains a reservoir that holds the substance.

8. The device of claim 1 or 2, wherein the housing is fabricated of a rigid material to prevent collapse of the housing during use.

5 9. The device of claim 1 or 2, wherein the housing is hollow and walls forming the housing have a thickness sufficient to prevent collapse of the housing during use.

10. The device of claim 1 or 2, wherein the housing is fabricated of a translucent material.

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11. The device of claim 1 or 2, wherein the housing is cylindrical in shape.

12. The device of claim 1 or 2, wherein the housing is at least 0.75 inch in length.

15 13. The device of claim 1 or 2, wherein the housing is at least 0.15 inch in its greatest cross-sectional width.

14. The device of claim 12, wherein the housing is between about 2.5 inches to about 5 inches in length.

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15. The device of claim 13, wherein the housing is between about 0.2 inch and 2 inch in its greatest cross-sectional width.

25 16. The device of claim 1 or 2, wherein the housing is hollow and walls of the housing have a thickness of at least about 0.1 mm.

17. The device of claim 14, wherein the thickness of the walls is between about 0.1mm to about 3 mm.

30 18. The device of claim 1 or 2, further comprising an actuation mechanism in connection with the delivery mechanism wherein manipulation of the actuation mechanism delivers the substance to the eye.

19. The device of claim 18, wherein the actuation mechanism is rotatable with respect to the housing such that rotating the actuation mechanism with respect to the housing delivers the substance to the eye.
- 5 20. The device of claim 18, wherein the actuation mechanism is movable upwards and/or downwards with respect to the housing such that movement of the actuation mechanism upwards and/or downwards with respect to the housing delivers the substance to the eye.
- 10 21. The device of claim 18, wherein the actuation mechanism includes a spray nozzle.
22. The device of claim 21, wherein the spray nozzle is positioned at the top of the housing and is movable downwards towards the housing such that moving the spray
15 nozzle downwards causes the substance to be delivered to the eye.
23. The device of claim 21, wherein spray nozzle is rotatable with respect to the housing such that rotation of the spray nozzle delivers the substance to the eye.
- 20 24. The device of claim 1 or 2, further comprising a non-aerosol pump for delivery of the substance to the eye.
- 25 25. The device of claim 1 or 2, further comprising a non-electrically produced pump for delivery of the substance to the eye.
26. The device of claim 25, wherein the non-electrically produced pump is a non-piezoelectric or non-electromagnetic pump.
27. The device of claim 1 or 2, wherein the substance is delivered to the eye in the
30 form of a spray or mist having a force less than that of an aerosol or electrically produced spray or mist.

28. The device of claim 1 or 2, wherein the force of the spray or mist delivered by the device is manipulated by varying the size of the outlet port.

29. The device of claim 1 or 2, wherein the force of the spray or mist delivered by the device is manipulated by varying the flow of substance through the outlet port.

30. The device of claim 1 or 2, further comprising a valve, wherein the valve allows and prevents the delivery of substance to the eye.

31. The device of claim 30, wherein the valve is a pressure-responsive valve.

32. The device of claim 1 or 2, wherein the device has a flowpath for the substance from the housing and out of the outlet port, and wherein the device further includes one or more portions along the flowpath that block the flowpath when the delivery of the substance is prevented and wherein the one or more portions along the flowpath open the flowpath when the substance is delivered.

33. The device of claim 1 or 2 further comprising an extension substantially or completely surrounding the outlet port and extending in the direction that the spray or mist is delivered wherein the extension assists in directing the substance to the eye and assists in preventing the substance from being delivered to areas outside of the eye.

34. A method for the delivery of an artificial tears composition to the ocular surface comprising:

providing a device in accordance with claim 1 or 2; and
delivering the composition to the ocular surface, wherein delivery is not dependent on gravitational forces.

35. The method of claim 34, wherein the step of delivering the composition to the ocular surface comprises delivering the composition to the ocular surface in the form of a non-aerosol spray or mist.

36. The method of claim 30, wherein the step of delivering the composition to the ocular surface comprises delivering the composition to the ocular surface in the form of a non-electrically produced spray or mist.

5 37. The method of claim 36, wherein the composition is delivered to the ocular surface in the form of a non-piezoelectric or non-electromagnetic spray or mist.

38. A method for the delivery of an artificial tear composition to the ocular surface comprising:

10 providing a device in accordance with claim 1 or 2; and
delivering the composition to the ocular surface in the form of a spray or mist in a generally horizontal direction.

39. The method of claim 38, wherein the device further comprising an actuation
15 mechanism in connection with the delivery mechanism and the method further comprises manipulating of the actuation mechanism to delivers the composition to the ocular surface.

40. The method of claim 39, wherein the actuation mechanism is rotatable with
20 respect to the housing and wherein the step of manipulating the actuation mechanism comprises rotating the actuation mechanism with respect to the housing.

41. The method of claim 39, wherein the actuation mechanism is movable upwards
and/or downwards with respect to the housing and wherein the step of manipulating
25 the actuation mechanism comprises moving the actuation mechanism upwards and/or downwards with respect to the housing.

42. The method of claim 38, wherein the delivery mechanism includes a non-aerosol pump and the method further comprises activating the pump to assist in
30 delivering the composition to the ocular surface.

43. The method of claim 38, wherein the step of delivering the composition to the ocular surface in the form of a spray or mist in a generally horizontal direction

provides for delivery of the composition in the form of a spray or mist having a force less than that of an aerosol or electrically produced spray or mist.

44. The method of claim 38, wherein the method further comprises manipulating the force of the spray or mist delivered by the device by varying the size of the outlet port.

45. The method of claim 38, wherein the method further comprises manipulating the force of the spray or mist delivered by the device by varying the flow of substance through the outlet port.

46. The method of claim 38, wherein the method further comprises manipulating the force of the spray or mist delivered by the device by varying the proximity of the outlet port with respect to the ocular surface.

47. The method of claim 39, wherein the method further comprises manipulating the force of the spray or mist delivered by the device by utilizing varying amounts of force on the actuation mechanism.

48. The method of claim 38, wherein the device further comprises one or more valves and wherein the method further comprises opening the valve to allow for delivery of the composition.

49. A method for the delivery of a substance to the ocular surface of a patient comprising:

providing a non-aerosol, non-electric delivery device housing the substance;
positioning the patient's head such that the line of sight is in a generally horizontal direction;

positioning device in front of the eye in the line of sight; and

delivering the substance to the eye as a spray or mist in a generally horizontal direction.

50. A method to minimize risk of infection when a substance is delivered to the comprising:

providing a non-aerosol, non-electric delivery device housing the substance;
holding the device a distance away from the eye without contacting the eye; and
5 delivering the substance to the eye in the form of a spray or mist.

51. The device of claim 1 or 2, wherein the device is reusable.

52. The device of claim 1 or 2, wherein the device is disposable.

10 53. The device of claim 18, wherein the actuation mechanism is removable.

54. The device of claim 51, wherein the housing is refillable with the substance.

15 55. The device of claim 51, wherein the housing is configured to hold one or more refill cartridge holding the substance.

20 56. The device if claim 51, wherein the housing is replaceable with new housings holding the substance.